

CORRECTED VERSION

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
8 January 2004 (08.01.2004)

PCT

(10) International Publication Number  
**WO 2004/002215 A2**

- (51) International Patent Classification<sup>7</sup>: **A01H**
- (21) International Application Number:  
PCT/US2003/020481
- (22) International Filing Date: 30 June 2003 (30.06.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/392,562 28 June 2002 (28.06.2002) US
- (63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:  
US 60/392,562 (CON)  
Filed on 28 June 2002 (28.06.2002)
- (71) Applicant (*for all designated States except US*): **THE SAMUEL ROBERTS NOBLE FOUNDATION, INC.** [US/US]; 2510 Sam Noble Parkway, Ardmore, OK 73401 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **DIXON, Richard, A.** [US/US]; 206 Woods Lane, Ardmore, OK 73401 (US). **PAIVA, Nancy, L.** [US/US]; HCR 70 Box 100, Ardmore, OK 73401 (US). **XIE, Deyu** [US/US]; 401 Willowridge Apt. A4, Ardmore, OK 73401 (US). **SHARMA, Shashi** [US/US]; 300 Sunset Drive, Highland Park Apt. 393, Ardmore, OK 73401 (US).
- (74) Agent: **HANSON, Robert, E.**; Fulbright & Jaworski L.L.P., 600 Congress Avenue, Suite 2400, Austin, TX 78701 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**  
— *without international search report and to be republished upon receipt of that report*
- (48) Date of publication of this corrected version:  
15 April 2004
- (15) Information about Correction:  
see PCT Gazette No. 16/2004 of 15 April 2004, Section II
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: GENETIC MANIPULATION OF CONDENSED TANNINS

(57) Abstract: The invention provides method and compositions for the modulation of condensed tannin production in plants. The methods of the invention allow creation of plants having novel phenotypes. Increased expression of condensed tannins in plants may be used to increase the nutritional value of food plants for both human and animal consumption. Increased condensed tannin content also reduces the potential for bloat in animals fed certain forage plants low in condensed tannin content. The invention may also be used to modify plant pigmentation.



WO 2004/002215 A2